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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,153	05/24/2001	Gerald T. Mearini	0937.0014	2815

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EXAMINER

PRITCHETT, JOSHUA L

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/865,153

Applicant(s)

MEARINI ET AL.

Examiner

Joshua L Pritchett

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aw

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/01</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

This action is in response to Election filed April 30, 2004. Applicant elected claims 11-14 and 16 with traverse.

Election/Restrictions

Claims 1-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper mailed April 30, 2004. Applicant's traversal was directed to the restriction of claims 11-14 and 16 from claim 15 and no arguments were provided for claims 1-10, therefore the restriction of claims 1-10 is deemed proper and made FINAL.

Claim Objections

Claims 14 and 16 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 11 states a surface smoothness of less than 0.05 nanometers. Claim 14 states a surface smoothness of *approximately* less than 0.01 nanometers. (Emphasis added) Claim 16 states the layer is *approximately atomically smooth*. (Emphasis added). The broadest reasonable interpretation of claims 14 and 16 would make the upper limit

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of the surface smoothness equal to or greater than 0.05 nanometers, thus failing the limit the parent claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips (US 6,545,809) in view of Wagal (US 4,987,007).

Regarding claims 11 and 14, Phillips teaches the use of an optical filter comprising a substrate (12) a high index layer (16, 22, 24; col. 6 lines 54-65) and a planarized diamond-like carbon layer (18, 14; col. 4 lines 16-49). Phillips lacks reference to the claimed surface roughness of the DLC layer. Wagal teaches a DLC layer with a surface roughness of less than 0.05 nanometers (abstract). Wagal discloses a surface roughness of about 1 Angstrom. One Angstrom (0.10 nanometers) is on the same order of magnitude as 0.05 nanometers, therefore without additional evidence of criticality the difference between the teaching of Wagal and the claimed limitation is viewed as lacking criticality. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the DLC layer of Phillips

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have the surface roughness taught by Wagal for the purpose of preventing light scattering at the surface of the DLC layer.

Regarding claim 12, Phillips teaches the filter has alternating multiple layer of the high index layer and the diamond-like carbon layer (Fig. 2).

Regarding claim 13, Phillips teaches the high index layer is silicon (col. 6 lines 64-65).

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips in view of Wagal as applied to claim 11 above, and further in view of Wolfe (US 5,377,045).

Phillips teaches a means for monitoring layer growth (col. 5 lines 41-44), a means for depositing the high index layer onto a substrate (Fig. 2), a means for depositing the diamond-like carbon onto the high index layer (Fig. 2), a means for monitoring the indices of refraction (col. 4 lines 56-60) and a means for directing an ion beam onto the carbon layer (col. 4 line 54).

Phillips teaches a required range for the physical layer thickness and the indices of refraction, therefore one of ordinary skill would find it obvious to have a means for monitoring those values to guarantee the values are within the specified ranges. Phillips lacks reference to the monitoring of intrinsic stress and means for smoothing the carbon layer. Wolfe teaches means for monitoring and adjusting the intrinsic stress (col. 2 lines 17-20). Wagal teaches a means for smoothing the carbon layer (abstract). Wagal teaches a required range for the smoothness of the carbon layer, therefore one of ordinary skill in the art would find it obvious to provide a means to achieve that smoothness. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Phillips invention include the smoothness of Wagal for the purpose of reducing light scattering at the surface of the carbon layer. It would further

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have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Phillips invention include the intrinsic stress monitoring and adjusting system of Wolfe for the purpose of producing a hard and chemically resistant film.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP 



**DREW A. DUNN
SUPERVISORY PATENT EXAMINER**